ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Air Permits Program

TECHNICAL ANALYSIS REPORT
For
Air Quality Control Minor Permit AQ0264MSS05

Eielson Air Force Base
United States Air Force

Central Heating and Power Plant Coal-Boiler Replacement

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Abbreviations and Acronyms

AAC .....Alaska Administrative Code
ADEC .....Alaska Department of Environmental Conservation; Department
BAE .....Baseline Actual Emissions
CEMS .....Continuous Emissions Monitoring System
CFR .....Code of Federal Regulations
CHPP .....Central Heat and Power Plant
COMS .....Continuous Opacity Monitoring System
EAFB .....Eielson Air Force Base
EF .....Emission Factor
HAC Major .....Hazardous Air Contaminant Major
HAC Minor .....Hazardous Air Contaminant Minor
MR&R .....Monitoring, Recording, and Recording
N/A .....Not Applicable
NSPS .....New Source Performance Standards
NTE .....Not-to-Exceed
ORL .....Owner Requested Limits
PSD .....Prevention of Significant Deterioration
PTE .....Potential to Emit
TAR .....Technical Analysis Report
USAF .....United States Air Force

Units and Measures

BTU .....British Thermal Units
lb, lbs .....pound, pounds
lb/ton .....pounds per ton
lb/MMBTU .....pounds per million British Thermal Unit input
MMBTU .....million British Thermal Units
ppmv .....parts per million by volume
tpy .....tons per year

Pollutants

CO .....Carbon Monoxide
HAP, HAC .....Hazardous Air Pollutant, Hazardous Air Contaminant
HCl .....Hydrogen Chloride, Hydrochloric Acid
HF .....Hydrogen Fluoride, Hydrofluoric Acid
NO_x .....Oxides of Nitrogen
NO_2 .....Nitrogen Dioxide (used interchangeably with NO_x)
PM .....Particulate Matter
PM-10 .....Particulate Matter with an aerodynamic diameter less than 10 microns
SO_2 .....Sulfur Dioxide
SO_x .....Oxides of Sulfur (used interchangeably with SO_2)
VOC .....Volatile Organic Compound

1. Introduction

This Technical Analysis Report (TAR) provides the Alaska Department of Environmental Conservation's (Department's) basis for issuing Air Quality Control Minor Permit AQ0264MSS05 to the United States Air Force (USAF) for the coal-fired boiler replacement project at Eielson Air Force Base (EAFB). This minor permit authorizes staged installation and operation of five new coal-fired boilers to replace six existing coal-fired boilers at the Central Heating and Power Plant (CHPP) of EAFB.

1.1 Stationary Source Description

EAFB is home of the 354th Fighter Wing of the USAF and serves as the base for weather reconnaissance aircraft, tactical units of the Alaskan Air Command, and many types of military aircraft. Significant emission units at EAFB are fuel burning equipment and fuel storage tanks. USAF currently uses six coal-fired boilers installed between 1951 and 1954 to provide heating and power to the base. The existing Title V permit contains an Owner Requested Limit (ORL) 220,000 tons coal per year in Emission Units 1 through 6 in order to avoid classification as a hazardous air pollutant major (HAP Major) stationary source (see Condition 27 of Permit AQ0264TVP01, Rev 1).

1.2 Application Description

USAF plans to replace the six existing boilers (Emission Units 1 through 6) with five new coal-fired boilers (Emission Units 1A, 2A, 4A, 5A, and 6A). In the application, USAF claims the replacement boilers are more reliable, more efficient, and have lower emissions. According to the application, the new boilers will use emission controls to reduce oxides of nitrogen (NO_x) sulfur dioxide (SO_2). The application does not specify the type of NOx and SOx controls that will come with the boilers or will be installed on the new boilers. The application also says the replacement boilers will emit less carbon monoxide (CO) because they are more efficient. Each replacement boiler will have Continuous Emissions Monitoring Systems (CEMS) to monitor NO_x, CO, and SO_2.

USAF will install existing bag houses on the replacement boilers to control particulate matter (PM). Therefore USAF assumes the existing and replacement boilers will have the same PM emission factors. The acid control system on the new boilers will also control chlorides and fluorides (Cl^- and F^-) that convert to hydrochloric acid (HCl) and hydrofluoric acid (HF).

USAF anticipates that the controls will reduce NO_x by about 65 percent and reduce acid emissions (SO_x, HCl, and HF) by about 50 percent. Tab E presents calculations that show that, with controls in place, the source will emit less than 10 tons of a HAP and less than 25 tons of all HAPs after completing Stage 1, even when operating at full capacity.

USAF will execute the project in stages beginning in 2011 and completing in 2019. When USAF removes an existing boiler, it will install a replacement boiler in its footprint. **Table 1** presents the anticipated replacement schedule as provided in Table 1 of the application.

Table 1 - Anticipated Replacement Schedule for Boilers at CHPP at EAFB

Stage	Start Year	Completion Year	Activity
1	2011	2013	Removal of Boiler 6, installation of Boiler 6A
2	2013	2015	Removal of Boiler 5, installation of Boiler 5A
3	2015	2016	Removal of Boiler 4, installation of Boiler 4A
4	2016	2018	Removal of Boiler 2, installation of Boiler 2A
5	2018	2019	Removal of Boiler 1, installation of Boiler 1A
Completion	2019	2020	Removal of Boiler 3 without replacement

It is possible USAF may change the replacement order of Emission Units 1 through 4 due to changes in their operability as they age. If this happens, USAF will request possible changes to the permit at that time.

In the project description of the application, USAF requests Owner Requested Limit (ORL) under 18 AAC 50.508(5) to prevent the project's potential emissions from exceeding the PSD modification thresholds for NO_x, CO, and SO_2 listed under 40 CFR 52.21(b)(23)(i).

In the application, USAF indicates that with the SO_2 control system, the source will be a true minor source of HAPs after Stage 1 (implying that the condition is no longer necessary for HAP major avoidance). However, USAF requests that the existing coal consumption ORL remain in place through Stage 4 to avoid classification under 18 AAC 50.502(c)(3) for this permit action.

Tab B of the application specifically describes the ORLs as follows:

(1) Limit CO emission in tpy by stage to avoid PSD major modification classification.
(2) Revise condition 27 of the Title V permit to limit coal consumption for existing and new boilers through Stage 4 in order to avoid needing a minor permit under 18 AAC 50.502(c)(3) for NO_x and SO_2.

USAF requested that the Department administratively amend the Title V permit to incorporate this minor permit under 18 AAC 50.326(c) (2). In the application they indicate that they will reimburse the Department for the $110 fee. 18 AAC 50.400(i) (2) requires applicant to pay a $110 fee before the Department takes action on an administrative amendment request.

The Departments findings on the application are in Section 0

2. Emissions Summary and Permit Applicability

2.1 Fuel Consumption, Emission Factors, and Emissions

In their application, USAF calculated emissions using the equation:

(Tons Pollutant Emitted) = ((tons coal burned) × (lb pollutant emitted per ton burned)) ÷ 2000

Emission factors are shown in **Table 2** and are based on the following:

1. For existing boilers, NO_x, CO, and VOC emission factors are from AP-42, Table 1.1-3; SO_x, PM, HCl, and HF emission factor are from a November 2005 source test.
2. For new boilers, NO_x, CO, and VOC emission factors are from AP-42, Table 1.1-3; SO_x, PM, HCl, and HF emission factor are from a November 2005 source test for the existing boilers, and assuming
3.

a. NO_x 65% control efficiency (Subpart Dc NO_x standard of 0.2 lb/MMBtu);
b. SO_2 50% control efficiency(acidic gas control device); and
c. HCl and HF 50% control efficiency.

Table 2 - Emission Factors for Boilers[a] (lb/ton)

Boilers	**NO_x**	CO	PM-10	SO_2	VOC	HCl	HF	Other HAPs
Existing	**8.80**	5.00	0.07	3.22	0.05	0.011	0.035	0.013
New	**3.06**	5.00	0.07	1.61	0.05	0.005	0.018	0.013

Table Notes
[a] EAFB Application for Minor Permit AQ0264MSS05, Table C-1.4, C-1.9, C-1.16, E-2.1, July 2009

Table 3 shows past actual and future potential (with ORL) coal consumption, as provided in the application. With the 551 tons of CO a year limitation, burning 278,620 tons of coal a year after Stage 4 does not cause 10 tpy emission increases of other pollutants that trigger minor permit requirements.

Table 3 - Past Actual Coal Consumption for Existing Boilers and Future Potential (ORL) Coal Consumption

<table>
<tr><td></td><td>Past Actual[a]</td><td colspan="6">Future Potential (ORL) Coal Combustion[b]</td></tr>
<tr><td>Boiler</td><td></td><td>Stage 1</td><td>Stage 2</td><td>Stage 3</td><td>Stage 4</td><td>Stage 5</td><td>Final Stage</td></tr>
<tr><td>3</td><td>41,181</td><td rowspan="6">161,374</td><td rowspan="5">142,074</td><td rowspan="3">112,641</td><td rowspan="2">74,545</td><td>99,400</td><td>-----</td></tr>
<tr><td>1</td><td>33,764</td><td>-----</td><td>-----</td></tr>
<tr><td>2</td><td>38,096</td><td>-----</td><td>-----</td><td>-----</td></tr>
<tr><td>4</td><td>29,434</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td></tr>
<tr><td>5</td><td>19,300</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td></tr>
<tr><td>6</td><td>18,944</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td></tr>
<tr><td>1A</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td rowspan="5">179,220</td><td rowspan="5">278,620</td></tr>
<tr><td>2A</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td rowspan="3">145,456</td></tr>
<tr><td>4A</td><td>-----</td><td>-----</td><td>-----</td><td rowspan="3">107,360</td></tr>
<tr><td>5A</td><td>-----</td><td>-----</td><td rowspan="2">77,926,</td></tr>
<tr><td>6A</td><td>-----</td><td>58,626</td></tr>
<tr><td>Total Actual</td><td>180,719</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Total Potential</td><td>220,000</td><td>220,000</td><td>220,000</td><td>220,000</td><td>220,000</td><td>278620</td><td>278,620</td></tr>
</table>

Table Notes:
[a] Past actual coal consumption for existing boilers is for 2007 and 2008, from Table C-1.8 of the application.
[b] Future potential (ORL) coal consumption for existing and new boilers from Table C-1.10A of the application. Actual amount of coal burned after Stage 4 is tied to CO emission levels.

Table 4 - Baseline Actual Emissions for Existing Boilers (tpy)[a]

Boiler #	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
1	33,764	148.6	84.4	1.1	54.4	0.8	0.2	0.6
2	38,095	167.6	95.2	1.3	61.3	1.0	0.2	0.7
3	41,181	181.2	103.0	1.3	66.3	1.0	0.2	0.7
4	29,434	129.5	73.6	0.9	47.4	0.7	0.2	0.5
5	19,300	84.9	48.3	0.6	31.1	0.5	0.1	0.3
6	18,944	83.4	47.4	0.9	30.5	0.5	0.1	0.3
Total BAE[a]	**180,718**	**795**	**452**	**6.1**	**291**	**4.5**	**1.0**	**3.1**

Table Notes:
[a] BAE for 2007 and 2008 and PTE from USAF Application for Minor Permit to Replace Coal-fired Boilers, Table C-1.9, July 2009

Table 5 – Existing and Future Potential to Emit by stage (tpy)

Stage	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
Existing	**220,000**	968	550	10.0	354	5.5	1.2	3.9
1	**220,000**	800	**551**	7.7	307	5.5	1.0	3.3
2	**220,000**	744	**551**	7.7	291	5.5	1.0	3.2
3	**220,000**	660	**551**	7.7	268	5.5	0.9	2.9
4	**220,000**	551	**551**	7.7	237	5.5	0.8	2.6
5	**278,620**	712	**551**	9.8	304	7.0	1.0	3.3
6	**278,620**	426	**551**	9.8	224	7.0	0.8	2.4

Table Notes:
[a] Coal consumption from in tables C-1.10A through C-1.14 and CO limit in tpy from Table C-1.17 (limits shown in bold). Tons of other pollutants calculated with the equation Emissions = (tons coal) x (applicable EF)
Tons of coal burned in Stage 5 and Completed Stage were assumed by applicant and used by the Department as limits to estimate the emissions of SOx and PM for Stage 5 and Completed Stage.

Table 6 through **Table 11** show that the ORLs allow USAF to avoid minor permitting under 18 AAC 50.502(c)(3) and to avoid project classification as a PSD major modification under 18 AAC 50.306.

Table 6 - Emissions Changes for Stage 1, tpy (Boilers in Use: 1, 2, 3, 4, 5, 6A)

Description	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
Future PTE	220,000	800	551	7.7	307	5.5	1.0	3.3
BAE	180,719	795	452	6.1	291	4.5	1.0	3.2
Existing PTE	220,000	968	550	10	354	5	1.2	3.9
Emission Change (BAE to Future PTE)		**5**	**99**	**1.6**	**16**	**1.0**	**0.0**	**0.1**
PSD Threshold		40	100	15	40	40	N/A	3
PSD Major Modification?		No	No	No	No	No	N/A	No
Emission Change (PTE to Future PTE)		**(168)**	**N/A**	**(2.3)**	**(47)**	**N/A**	**N/A**	**N/A**
Minor Permit Threshold		10	N/A	10	10	N/A	N/A	N/A
Minor Permit Required?		No	N/A	No	No	N/A	N/A	N/A

Table 7 - Amount of Coal Burned and Emission Changes for Stage 2, tpy (Boilers in Use: 1, 2, 3, 4, 5A, 6A)

Description	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
PTE	220,000	744	551	7.7	291	5.5	1.0	3.2
BAE	180,719	795	452	6.1	291	4.5	1.0	3.2
Existing PTE	220,000	968	550	10	354	5	1.2	3.9
Emission Change (BAE to Future PTE)		**(51)**	**99**	**1.6**	**0**	**1.0**	**0**	**0**
PSD Threshold		40	100	15	40	40	N/A	3
PSD Major Modification?		No	No	No	No	No	N/A	No
Emission Change (PTE to Future PTE)		(224)	N/A	(2.3)	(63)	N/A	N/A	N/A
Minor Permit Threshold		10	N/A	10	10	N/A	N/A	N/A
Minor Permit Required?		No	N/A	No	No	N/A	N/A	N/A

Table 8 - Emission Changes for Stage 3, tpy (Boilers in use: 1, 2, 3, 4A, 5A, 6A)

Description	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
Future PTE	220,000	660	551	7.7	268	5.5	0.9	2.9
BAE	180,719	795	452	6.1	291	4.5	1.0	3.2
Existing PTE	220,000	968	550	10	354	5	1.2	3.9
Emission Change (BAE to Future PTE)		**(135)**	**99**	**1.5**	**(23)**	**1.0**	**(0.1)**	**(0.3)**
PSD Threshold		40	100	15	40	40	N/A	3
PSD Major Modification?		No	No	No	No	No	N/A	No
Emission Change (PTE to Future PTE)		**(308)**	N/A	**(2.3)**	**(86)**	N/A	N/A	N/A
Minor Permit Threshold		10	N/A	10	10	N/A	N/A	N/A
Minor Permit Required?		No	N/A	No	No	N/A	N/A	N/A

Table 9 - Emission Changes for Stage 4, tpy (Boilers in Use: 1, 2A, 3, 4A, 5A, 6A)

Description	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
Future PTE	220,000	551	551	7.7	237	5.5	0.8	2.6
BAE	180,719	795	452	6.1	291	4.5	1.0	3.2
Existing PTE	220,000	968	550	10	354	5	1.2	3.9
Emission Change (BAE to Future PTE)		**(244)**	**99**	**1.5**	**(54)**	**1.0**	**(0.2)**	**(0.6)**
PSD Threshold		40	100	15	40	40	N/A	3
PSD Major Modification?		No	No	No	No	No	N/A	No
Emission Change (PTE to Future PTE)		**(417)**	**N/A**	**(2.3)**	**(117)**	**N/A**	**N/A**	**N/A**
Minor Permit Threshold		10	N/A	10	10	N/A	N/A	N/A
Minor Permit Required?		No	N/A	No	No	N/A	N/A	N/A

Table 10 - Emission Changes for Stage 5, tpy (Boilers in Use: 1A, 2A, 3, 4A, 5A, 6A)

Description	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
Future PTE	278,620	712	551	9.8	304	7.0	1.0	3.3
BAE	180,719	795	452	6.1	291	4.5	1.0	3.2
Existing PTE	220,000	968	550	10	354	5	1.2	3.9
Emission Change (BAE to Future PTE)		**(83)**	**99**	**3.7**	**13**	**2.0**	**0.0**	0.1
PSD Threshold		40	100	15	40	40	N/A	3
PSD Major Modification?		No	No	No	No	No	N/A	No
Emission Change (PTE to Future PTE)		**(256)**	**N/A**	**(0.2)**	**(50)**	**N/A**	**N/A**	**N/A**
Minor Permit Threshold		10	N/A	10	10	N/A	N/A	N/A
Minor Permit Required?		No	N/A	No	No	N/A	N/A	N/A

Table 11 - Emission Changes for Completed Project, tpy (Boilers in Use: 1A, 2A, 4A, 5A, 6A)

Description	Tons Coal	NO_x	CO	PM-10	SO_2	VOC	HCl	HF
Future PTE	278,620	426	**551**	9.8	224	7.0	0.8	2.4
BAE	180,719	795	452	6.1	291	4.5	1.0	3.2
Existing PTE	220,000	968	550	10	354	5	1.2	3.9
Emission Change (BAE to Future PTE)		**(369)**	**99**	**3.7**	**(67)**	**2.5**	**(0.2)**	**(0.8)**
PSD Threshold		40	100	15	40	40	N/A	3
PSD Major Modification?		No	No	No	No	No	N/A	No
Emission Change (PTE to Future PTE)		**(542)**	**N/A**	**(0.2)**	**(130)**	**N/A**	**N/A**	**N/A**
Minor Permit Threshold		10	N/A	10	10	N/A	N/A	N/A
Minor Permit Required?		No	N/A	No	No	N/A	N/A	N/A

HAP Major Stationary Source Avoidance

USAF also wants to continue to avoid classification as a HAP Major. The existing CHPP boilers emit five tons of HAPs in addition to another five tons from other EAFB emission units. To continue to avoid HAP Major classification during the project, total HAP emissions from the stationary source must be less than 25 tpy and total emission for any HAP must be less than 10 tpy. The coal consumption limits will make the stationary source a minor for HAPs for the first four stages. After that, the acid control system will continue to allow the source to avoid HAP-Major classification.

PSD Major Modification Avoidance

To avoid a PSD classification, increase in HF emissions must be less than three tons a year. As shown in Table 12, from Stage 1 through Stage 4, emission increases in HF exceed three tons if the ORLs are not in place. After Stage 4, with the acid control system requirements in place, the source continues to avoid PSD Major modification classification for HF and HCl. Table 12 summarizes the hypothetic situation when all boilers in use run at maximum capacity.

Table 12: Emission of HAPs with Each Boiler in Use Running at Full Capacity

Stage of Project	Type of Boiler	Maximum Tons Coal	Tons HCl	Tons HF	Tons Other HAPs	Comments
Stage 1	Old	497,000	2.7	8.7	3.2	
	New	96,475	0.3	0.8	0.6	
	All	593,475	3.0	**9.5**	3.9	HAP Major due to HF
Stage 2	Old	397,600	2.2	7.0	2.6	
	New	192,950	0.5	1.7	1.3	
	All	590,550	2.7	**8.6**	3.8	HAP Major due to HF
Stage 3	Old	298,200	1.6	5.2	1.9	
	New	289,425	0.8	2.5	1.9	
	All	587,625	2.4	**7.8**	3.8	HAP Major due to HF
Stage 4	Old	198,800	1.1	3.5	1.3	
	New	385,900	1.1	3.4	2.5	
	All	584,700	2.2	**6.9**	3.8	HAP Major due to HF
Stage 5	Old	99,400	0.5	1.7	0.6	
	New	482,375	1.3	4.2	3.1	
	All	581,775	1.9	**6.0**	3.8	True HAP Minor
Final Stage	Old	0	0.0	0.0	0.0	
	New	482,375	1.3	4.2	3.1	
	All	482,375	1.3	4.2	3.1	True HAP Minor

After Stage 4, the applicant wants the ORLs in terms of CO emissions. The Department determined the allowable CO emissions as 551 tons a year for all stages of the project. This means the source can burn coal up to its maximum capacity so long as the CO emissions do not exceed 551 tons. The maximum capacity for Stage 5 is 99,400 tons from the lone old boiler they can still operate and 482,000 tons of coal from the five new boilers giving a total of 582,000 tons of coal a year. Without the acid control systems to reduce HF and HCl emissions, the source could emit 10 tons of HF emissions. This is six tons above the existing PTE for HF and 7 tons above the existing BAE. Similarly, operating at full capacity after completing the installations, EAFB can burn up to 482,000 tons of coal in the five new boilers (so long as CO emissions do not exceed 551 tons) and emit 8 tons of HF. This is a four ton increase over the existing PTE and five ton increase over existing BAE. An increase of three tons HF makes the boiler replacement project a PSD Major modification.

Without the acid controls to limit HF emissions, the 551 tons CO emission limit may not be sufficient to limit HF emission increases to less than three tons a year. If the new boilers have acid controls, USAF cannot emit more than six tons of HF in Stage 5 even it runs at maximum capacity (582,000 tons a year). Similarly USAF cannot emit more than four tons of HF after completing the installations even if it runs at full capacity (482,000 tons a year).

Therefore the new boilers need to have acid controls if the Department removes the limits on amount of coal USAF can burn. The Department could limit coal consumption in Stage 5 and Completed Stage to 582,000 tons a year or 551 tons of CO, whichever comes first. However, it does not make sense to include the tons of coal limit as a permit condition since the physical capacity of the facility in Stage 5 is 582,000 tons of coal a year and capacity after completion is 482,000 tons of coal a year.

2.2 Department Findings

The Department has made the following findings regarding USAF's application:

1. EAFB is classified as a PSD major stationary source.
2. The existing ORL in condition 27 of the Title V permit allows EAFB to avoid HAP-Major classification for existing boilers prior to the boiler replacement project.
3. With the new ORLs in place when the boiler replacement project starts, EAFB avoids HAP-major source classification during the first four stages of the boiler replacement. After Stage 4, the acid controls on the new boilers allow EAFB to continue to avoid HAP Major classification, as well as avoid PSD major modification for HF and HCl.
4. The ORLs restrict the annual emissions of NO_x, CO, and SO_x from boilers at the CHPP during each stage of the replacement project and for the completed project. The project is classified under 18 AAC 50.508(5). The ORL ensures that the project emission increases do not exceed PSD emission thresholds and also do not exceed project classification thresholds under 18 AAC 50.502(c)(3).
5. USAF requests that the Department revise Condition 27 of its Title V Permit. The Department cannot change a Title V provision in a Title I permit. Therefore, rather than revising condition 27 in the Title V permit, this permit adds new ORLs to avoid PSD major modification classification and minor permit classification under 18 AAC 50.502(c) for the boiler replacement project. The ORLs have the ancillary effect of allowing the source to continue to avoid HAP Major classification. As described in the permit administration section, this is an off-permit change with respect to Title V permitting. Therefore, USAF may operate under this permit without obtaining a revision to the Title V permit. In an email dated November 17, 2009, from Katherine Stringham of USAF to Sally Ryan of ADEC, USAF rescinded its request for the Department to administratively amend the Title V permit.
6. EAFB is not located in a coastal district[1]. The project therefore does not have to satisfy the Alaska Coastal Management Program (ACMP) through AS 46.40.040(b)(1). This permit is a minor permit classified under 18 AAC 50.508(5). This classification is not on the ACMP C list, therefore the ACMP project modification and Department single agency review procedures do not apply.

3. Permit Requirements

[1] Alaska Coastal Management Program Boundaries Map; http://www.alaskacoast.state.ak.us/GIS/IndexMap.pdf; accessed Sep 29, 2009

3.1 Requirements for All Minor Permits

As described in 18 AAC 50.544(a), each minor permit issued under 18 AAC 50.542 must identify the stationary source, the project, the Permittee, contact information, the requirement to pay fees, and the applicable standard permit conditions in 18 AAC 50.345. The permit cover page identifies the stationary source, project, Permittee, and contact information. The permit also contains the standard conditions needed to make the permit enforceable. The permit does not include fee requirements because the requirement to pay fees is in the Title V permit.

3.2 Owner Requested Limits and Maintenance, Recording & Reporting

Per 18 AAC 50.544(h), minor permit AQ0264MSS05 describes the Owner Requested Limits (ORL) and Monitoring, Recording and Reporting (MR&R).

- **ORL (Tons Coal Burned)**: The tons burned in the old boilers (Emission Units 1 through 6) must not exceed the amount specified in the permit USAF must track, record, and report emissions of NO_x, CO, and SO_2 from the replacement boilers with a CEMS. After completing Stage 4, USAF is limited to burning an amount of coal that will not emit more than 551 tons of CO per 12 rolling months.
- **ORL (PTE)**: For all stages, total CO is limited to 551 tons of CO per year as tracked and recorded with the CEMS on the replacement boilers and calculations of emissions from the existing boilers.
- **Emission Controls**: New Source Performance Standards require new coal-fired boilers to emit less than 0.20 lb NO_x/MMBTU input, 0.20 lb SO_x/MMBTU, and 0.030 lb PM/MMBTU input. ADEC regulations require new boilers to emit less than 500 ppmv SO_x and 0.05 grain/scf in the exhaust. The permit contains a requirement that the replacement boilers have baghouses to meet ADEC PM standards. USAF states that the replacement boilers will have NO_x and SO_x but does not know the type of controls yet. The permit requires USAF to put NO_x and SO_x controls on the replacement boilers to reduce NO_x emissions by 65 percent and SO_x emission by 50 percent. USAF is also required to monitor, record, and report the control efficiencies to confirm that they perform as expected because the Department used the emission reduction assumptions to draft the permit.
- **MR&R for Existing Boilers**: USAF is required to continue to comply with the MR&R requirements in the Title V permit applicable to the existing boilers except as specified in this permit. The only MR&R this permit adds for the existing boilers is the tracking and reporting of coal burned in each existing boiler.
- **MR&R for Replacement Boilers**: USAF is required to use a CEMS to demonstrate that NO_x, CO, and SO_2 emissions at any stage of the project will not exceed PSD and minor permit applicability emission increase thresholds. USAF is required to use the CEMS and methods that comply with PS-4a in Appendix B of 40 CFR Part 60 to measure the emissions of CO from each replacement boiler. The permit requires USAF to comply with the requirements in 40 CFR 60.47b to install, maintain, and operate the CEMS to monitor, measure, and record SO_2 emissions. The permit requires USAF to comply with the requirements of 40 CFR 60.48b(a) to install, calibrate, maintain, and operate a COMS for measuring the opacity of emissions and record the output. The permit requires USAF comply with 40 CFR 60.48b to install, calibrate, maintain, and operate a CEMS to monitor, measure, and record NO_2 emissions.

4. Permit Administration

This permit adds new ORLs to avoid classification under 18 AAC 50.502(c) and as a PSD major modification. The new ORLs also continue to require the stationary source to avoid HAP major classification.

The provisions include coal consumption limits for both existing and new boilers. The provisions in this minor permit are off permit changes with respect to Title V permitting because it is not necessary to change condition 27 in order for the source to continue to avoid HAP major classification.

Therefore, USAF may operate under this minor permit until the Department issues a new Title V permit. However, until the existing Title V permit is renewed or revised, the Permittee is required to continue to comply with existing condition 27 of the Title V permit for the existing boilers.